



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1
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NAVSTA NEWPORT RI
5090 3a

January 17, 2002

James Shafer, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Groundwater Risk Evaluation for the Old Fire Fighting Training Area at the Naval Station Newport, Rhode Island

Dear Mr. Shafer:

Thank you for the opportunity to review the *Groundwater Risk Evaluation for the Old Fire Fighting Training Area* dated December 2001. EPA reviewed the risk evaluation for required components and compliance with both national and regional EPA guidance for performing human health risk assessments. The receptors selected and exposure parameters used in this evaluation were previously agreed upon by EPA. Detected concentrations of analytes were compared to drinking water Maximum Contaminant Levels as requested by EPA Region 1. Analytes exceeding MCLs were retained as Chemicals of Potential Concern for the risk evaluation. Detailed comments are provided in Attachment A.

According to EPA Region I's Risk Update #3 dated August 1995, EPA accepts the qualitative risk evaluation approach for VOCs inhalation pathway by assuming that the risk from inhalation of VOCs during household use (including showering, bathing, toilets, dishwashers, washing machines and cooking) is equivalent to that from ingestion. The Navy has, however, chosen to run the Foster and Chrostowski's showering model to quantitatively evaluate VOCs inhalation pathway, which is also approved by EPA, instead of the qualitative approach. Since the modeling approach is more complicated than the qualitative approach, it needs to be conducted correctly and all the results need to be provided for verification purposes. The two approaches should provide roughly similar results of non-cancer and cancer risks.

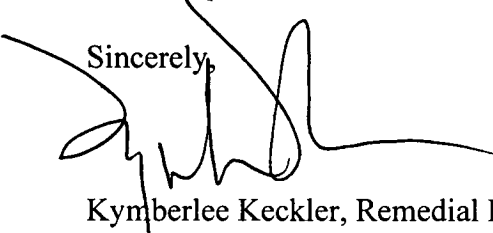
EPA was not able to verify the results of the RME inhalation hazard quotients (HQs) for benzene and naphthalene. EPA Region 1 guidance (EPA, 1995) suggests that inhalation risks and hazard quotients are expected to be roughly equal to ingestion risks and hazard quotients. However, the RME inhalation HQ results (as presented in Table 5-2) are not comparable to the ingestion HQs for each chemical, as would be expected. The ingestion HQ for benzene is (0.3), while the inhalation HQ is an order of magnitude higher at (4.64). The difference between the ingestion and inhalation naphthalene HQ values is even greater with the inhalation HQ (24.5) two orders of magnitude higher than the ingestion HQ (0.2). These inhalation hazard quotients indicate an

unacceptable risk from both benzene and naphthalene in the groundwater. Please double check these values to ensure that inhalation risks are not overestimated.

The showering model was used to generate the inhalation risk and hazard quotient values, instead of assuming that the inhalation risks and hazard quotients are roughly equal to the ingestion values as recommended by EPA Region 1 guidance. The calculation and use of the "Q" variable in the model may be incorrect. Table 3-5 incorrectly defines "Q" as being "chemical-specific." "Q" is a time constant. When the showering model was run using a typical "Q" value of approximately 2.5, the inhalation HQ result was roughly the same as the ingestion HQ for benzene, as would be expected. Since the showering model was used to generate inhalation risk and hazard quotient values, please verify all results of the showering model conducted for this evaluation. Also, please include the calculated "Q" value in Table 3-5 and present the model results similar to that presented for the lead model.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the protection of the groundwater resources of the Old Fire Fighting training Area. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,



Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Chau Vu, USEPA, Boston, MA
Paul Kulpa, RIDEM, Providence, RI
Melissa Griffin, NETC, Newport, RI
Jennifer Stump, Gannett Fleming, Harrisburg, PA

ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. 2-3, §2.5.1	The second paragraph in this section indicates that the CTE EPCs were selected as the “minimum variance unbiased estimate of the population’s arithmetic mean” for lognormal distributions (assuming this value is less than the maximum detected value). Please clarify how these estimates of the population’s arithmetic mean were calculated.
Table 2-2	One of the columns in this table may be incorrectly labeled as “Arithmetic Mean or Mean of Logs.” The values shown in this column are too large to represent the mean of the log transformed concentrations. Should the correct title for this column should be “Arithmetic Mean or Geometric Mean?”

REFERENCES:

USEPA, 1989. United States Environmental Protection Agency. 1989. Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

USEPA, 1995. EPA Region 1 Risk Update, Number 3, August 1995.

USEPA, 2000. United States Environmental Protection Agency. 2000. Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment, Interim Guidance.), Office of Emergency and Remedial Response. Washington, DC.